

I CLAIM:

1. A striker plate for a rotatable rotor or stationary anvil of a rotary comminuting device comprising:

a striker plate having:

a first end face,

a second end face,

a rear face for attachment to a rotor or anvil,

a front face parallel the rear face,

a right cutting side face extending between the rear face and the front face on a right side thereof, and

a left cutting side face extending between the rear face and the front face on a left side thereof,

a right rear cutting edge formed at a juncture between the right side cutting face and the rear face,

a right front cutting edge formed at a juncture between the right side cutting face and the front face,

a left front cutting edge formed at a juncture between the left side cutting face and the front face,

a left rear cutting edge formed at a juncture between the left side cutting face and the rear face,

the right cutting side face comprising a plurality of identical planar right lands interspaced by a plurality of identical, parallel right grooves,

the right lands all lying in the same flat right land plane and each spaced from each adjacent right land by one of the right grooves, the right land plane disposed at a first angle to the rear face,

each right groove comprising a frusto-cylindrical surface of an angular extent not greater than 180 degrees about a respective groove axis extending at a second angle to the rear face,

each respective groove axis for all of the right grooves lying in a same right axis plane,

the left cutting side face comprising a plurality of identical planar left lands interspaced by a plurality of identical, parallel left grooves,

the left lands all lying in the same flat left land plane and each spaced from each adjacent left land by one of the left grooves, the left land plane disposed at the first angle to the rear face,

each left groove comprising a frusto-cylindrical surface of an angular extent not greater than 180 degrees about a respective groove axis extending at the second angle to the rear face,

each respective groove axis for all of the left grooves lying in a same left axis plane,

the right land plane parallel to the left land plane.

2. A striker plate as claimed in claim 1 wherein the right axis plane is parallel the right land plane and the left axis plane is parallel the left land plane.

3. A striker plate as claimed in claim 1 wherein the first angle is 90 degrees.

4. A striker plate as claimed in claim 2 wherein the right axis plane is parallel the right land plane and the left axis plane is parallel the left land plane.

5. A striker plate as claimed in claim 3 wherein the angular extent of each groove about its respective axis is in the range of 120 to 180 degrees.

6. A striker plate as claimed in claim 1 wherein the striker plate is made in a process comprising the steps of:

a. providing a flat sheet of metal with opposed planar surfaces to become the rear face and front face,

- b. forming a plurality of straight parallel rows of spaced bores with each row comprising a plurality of parallel cylindrical bores through the sheet at the same first angle to the rear surface with each bore in the row to be about a bore axis which lies in a same bore plane and are spaced an equal distance from adjacent bores in the row, and
- c. cutting through the sheet along a plurality of flat planar cut lines, one cut line for each row of bores in a plane parallel to the bore plane for that row of bores and passing through the bores of that row at or to one side of the bore axis,

wherein each land is formed as segments of a cut line for a row of bores between adjacent bores in a row of bores and each groove comprises a portion of a bore between the lands.

7. A striker plate as claimed in claim 6 wherein the process includes heat treating the metal sheet after steps (a) to (c).

8. A striker plate as claimed in claim 6 wherein step (c) divides the sheet into portions from which at least two striker plates are to be formed, one portion on each side of the cut line.

9. A striker plate as claimed in claim 8 including a further step of:

- d. cutting through the sheet along a plurality of a flat planar end cut line in a plane transverse to the land planes and passing through the bore axis of bores in different rows.

10. A striker plate as claimed in claim 1 including at least one bore through the striker plate from the front face to the rear face adapted to receive a fastener adapted to secure the striker plate to a rotor or anvil.

11. A striker plate as claimed in claim 1 including at least two bores through the striker plate from the front face to the rear face adapted to receive a fasteners to secure the striker plate to a rotor or anvil,
the bores spaced from each other along a longitudinal extending between first and second end faces.
12. A striker plate as claimed in claim 1 which is machined from a flat planar sheet of metal merely by forming circular bores therethrough and cutting along flat planar cut lines.
13. A comminuting apparatus having: ✓
a rotor for rotation about a horizontal axis relative to a stator ,
the rotor having replaceable rotor striker plates secured thereto with a cutting side surface disposed radially outwardly from an outer most radial perimeter of the rotor,
the cutting side surface of the rotor having axially spaced rotor teeth with radially inwardly extending rotor grooves between adjacent rotor teeth,
a stationary anvil fixed to the stator radially outwardly of the rotor extending axially of the rotor and presenting replaceable anvil striker plates secured thereto with a cutting side surface disposed radially inwardly from an inner most radial perimeter of the stator towards the rotor,
the cutting side surface of the stator having axially spaced stator teeth with radially inwardly extending stator grooves between adjacent stator teeth,
the stator teeth alternating axially with the rotor teeth with each stator tooth disposed in a rotor groove spaced therefrom extending radially inwardly into the rotor groove radially inwardly of the radially outermost portions of the adjacent rotor teeth and with each rotor tooth disposed in a stator groove extending radially outwardly into the stator groove radially outwardly of the radially innermost portions of the adjacent stator teeth,

wherein at every axial point a radially extending gap is provided between the cutting side surface of the rotor striker plates and the cutting side surface of the stator striker plates,

the radially extending gap varying in radial extent over the axial extent of at least some of the stator grooves and rotor grooves.

14. A comminuting apparatus as claimed in claim 13 wherein:

the radially outermost portions of rotor teeth within the stator grooves spaced by an axially extending gap from the radially innermost portions of adjacent stator teeth within the rotor grooves,

the axially extending gap varying in axial extent over the radial extent of each of a plurality of the radially outermost portions of rotor teeth within the stator grooves or the radially innermost portions of adjacent stator teeth within the rotor grooves.

15. A comminuting apparatus as claimed in claim 13 wherein the rotor striker plates and stator striker plates are identical.

16. A comminuting apparatus as claimed in claim 13 wherein each striker plate comprising:

an elongate generally rectangular striker plate having:

a first end face,

a second end face,

a rear face for attachment to a rotor or anvil,

a front face parallel the rear face,

a right cutting side face extending between the rear face and the front face on right side thereof, and

a left cutting side face between the rear face and the front face on a left side thereof,

a right rear cutting edge formed at a juncture between the right side cutting face and the rear face,

a right front cutting edge formed at a juncture between the right side cutting face and the front face,

a left front cutting edge formed at a juncture between the left side cutting face and the front face,

a left rear cutting edge formed at a juncture between the left side cutting face and the rear face,

the right cutting side face comprising a plurality of identical planar right lands interspaced by a plurality of identical, parallel right grooves,

the right lands all lying in the same flat right land plane and each spaced from each adjacent right land by one of the right grooves, the right land plane disposed at a first angle to the rear face,

each right groove comprising a frusto-cylindrical surface of an angular extent not greater than 180 degrees about a respective groove axis extending at a second angle to the rear face,

each respective groove axis for all of the right grooves lying in a same right axis plane,

the left cutting side face comprising a plurality of identical planar left lands interspaced by a plurality of identical, parallel left grooves,

the left lands all lying in the same flat left land plane and each spaced from each adjacent left land by one of the left grooves, the left land plane disposed at the first angle to the rear face,

each left groove comprising a frusto-cylindrical surface of an angular extent not greater than 180 degrees about a respective groove axis extending at the second angle to the rear face,

each respective groove axis for all of the left grooves lying in a same left axis plane,

the right land plane parallel to the left land plane.

17. A striker plate as claimed in claim 16 wherein the first angle is 90 degrees.
18. A striker plate as claimed in claim 17 wherein the angular extent of each groove about its respective axis is in the range of 120 to 180 degrees.
19. A striker plate as claimed in claim 11 wherein each land has an axial extent which is less than the axial extent of each groove.
20. A striker plate as claimed in claim 19 wherein each groove has the same groove radius relative an axis about which its frusto-cylindrical surface is disposed, each land has an axial extent which is in the range of 0.95 to 0.25 times the groove radius.